

## Aswan High Dam

The Aswan High Dam blocks the NILE RIVER near the resort town of Aswan in Upper Egypt. One of the world's largest structures, the rock-fill dam, completed in 1970, has a volume about 17 times that of the Great Pyramid at Giza. It is 3.26 km (2.3 mi) in length and rises 111 m (364 ft) above the riverbed. Lake NASSER (High Dam Lake), the reservoir it impounds, averages 9.6 km (6 mi) wide and extends upstream 499 km (310 mi). About 30 percent of its length is in neighboring Sudan. An earlier granite dam, the Aswan Dam, lies 6.4 km (4 mi) downstream—about midway between the Aswan High Dam and the town. The Aswan Dam was completed in 1902, but its crest has been twice raised.

Ten years in construction, the Aswan High Dam cost \$1 billion. The water it stores has opened the way to agricultural expansion. More than 360,000 ha (900,000 acres), most of it formerly desert, were added to the total of arable land; an equal amount was irrigated year round to enable it to produce several crops a year instead of just one. Between 1979 and the mid-1980s, however, overuse and drought led to a 20% drop in the water level of Lake Nasser, forcing drastic reductions in the flow of irrigation water and reducing power output by 55%. The dam has a hydroelectric power capacity of 2.1 million kW and supplies more than 25% of Egypt's power.

Both Aswan dams have been the focus of worldwide archaeological concern. Construction of the Aswan Dam in 1902 partially inundated the Temple of PHILAE. Lake Nasser inundated many ancient sites, including the temples and colossi at ABU SIMBEL. Through an international effort these structures were raised and relocated on the new shoreline. As a result of the creation of Lake Nasser, 100,000 Egyptian and Sudanese Nubians had to be resettled.

Many of the negative environmental effects that were anticipated from the dam have not yet appeared. A study completed in 1982 found that the incidence of bilharzia and other waterborne diseases is lower in the areas along the Nile than it was before the dam was built. Evaporation from Lake Nasser is not as high as was predicted. But other adverse ecological effects have been recorded: salt buildup in the irrigated areas and increased salinity in the waters of the Nile itself; the destruction of the sardine fishery in the eastern Mediterranean because of the decrease in silt; erosion in the Nile waterway and in the delta region. Efforts are underway to establish a fishery in the lake and to resettle its shores.

**Bibliography:** Fahim, H. M., *Dams, People, and Development* (1982); Shibl, Yasuf, *Aswan High Dam* (1971); White, G. F., "The Environmental Effects of the High Dam at Aswan," *Environment*, September 1988.

# Aswan High Dam

The Aswan High Dam blocks the Nile RIVER near the resort town of Aswan in Upper Egypt. One of the world's largest structures, the rock-fill dam, completed in 1970, has a volume about 17 times that of the Great Pyramid at Giza. It is 2.38 km (1.48 mi) in length and rises 117 m (384 ft) above the riverbed. Lake NASSER (High Dam Lake) the reservoir it impounds, averages 5 km (3 mi) wide and extends upstream 499 km (310 mi). About 30 percent of its length is in neighboring Sudan. An earlier dam, the Aswan Dam, has 6.4 km (4 mi) downstream—about midway between the Aswan High Dam and the town. The Aswan Dam was completed in 1902, but its canal has been twice raised.

Ten years in construction, the Aswan High Dam cost \$1 billion. The water it stores has opened the way to agricultural expansion. More than 300,000 ha (600,000 acres) of formerly desert were added to the total of arable land; an equal amount was irrigated year-round to enable it to produce several crops a year instead of just one. Between 1970 and the mid-1980s, however, overuse and drought led to a 30% drop in the water level of Lake Nasser, forcing drastic reductions in the flow of irrigation water and reducing power output by 50%. The dam has a hydroelectric power capacity of 2.1 million kW and supplies more than 25% of Egypt's power.

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Many of the negative environmental effects that were anticipated from the dam have not yet appeared. A study completed in 1982 found that the incidence of different and other waterborne diseases is lower in the area along the Nile than it was before the dam was built. Evaporation from Lake Nasser is not as high as was predicted. But other adverse ecological effects have been recorded: salt buildup in the irrigated areas and increased salinity in the waters of the Nile itself; the destruction of the southern fishery in the eastern Mediterranean because of the decrease in salt content in the Nile waterway and in the delta region. Efforts are underway to establish a fishery in the lake and to resettle its shores.

Bibliography: Fahim, H. M., *Dams, People, and Development* (1983); Smith, Aswan High Dam (1977); Wilber, G. F., *The Environmental Effects of the High Dam at Aswan*, Environment, September 1983.

## **Teton Dam**

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The Teton Dam and Reservoir were the principal features of the Teton Basin Project on the Teton River in southeastern Idaho. This multipurpose project was designed to provide irrigation, power production, flood control, and recreation. Construction began in February 1972 and was completed in September 1975.

Reservoir filling began on Oct. 3, 1975, when the river outlet was closed. The dam collapsed on June 5, 1976, as a result of internal erosion of the core material. A 780-sq km (300-sq mi) area was flooded, 11 lives were lost, and more than 25,000 people were left homeless.

Thomas J. Concannon

Teton Dam

(see: Teton)

The Teton Dam and Reservoir were the principal features of the Teton Basin Project on the Teton River in southeastern Idaho. This multipurpose project was designed to provide irrigation, power production, flood control, and recreation. Construction began in February 1972 and was completed in September 1975.

Reservoir filling began on Oct. 2, 1975, when the river outlet was closed. The dam collapsed on June 5, 1976, as a result of internal erosion of the core material. A 750-sq km (290-sq mi) area was flooded. 11 lives were lost and more than 25,000 people were left homeless.

Thomas J. Condon